

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF MASSACHUSETTS**

SINGULAR COMPUTING LLC,
Plaintiff,
v.
GOOGLE LLC,
Defendant.

Civil Action No. 1:19-cv-12551 FDS
Hon. F. Dennis Saylor IV

**DEFENDANT'S GOOGLE, LLC'S OPPOSITION TO
PLAINTIFF'S MOTION TO COMPEL INSPECTION, TESTING,
AND SOURCE CODE OF THE ACCUSED PRODUCTS**

TABLE OF CONTENTS

I.	INTRODUCTION	1
II.	BACKGROUND	2
	A. TPUs, Cloud TPUs, and Google's data centers	2
	B. Singular's request for a Cloud TPU account and to inspect a data center.....	4
	C. Google's provision of source code to Singular.....	7
III.	ARGUMENT	7
	A. Singular's request to inspect Google's data centers is procedurally improper, overly burdensome, and unlikely to lead to relevant information.....	7
	1. <i>Singular's demands to inspect a data center are procedurally improper and untimely.</i>	7
	2. <i>Singular's data center inspection request is duplicative, burdensome, and unlikely to lead to relevant information.</i>	11
	B. Singular's motion to compel access to a Cloud TPU account is also procedurally improper and untimely, particularly given Singular's previous rejection of Google's offer to provide access to such an account.....	15
	C. Singular's motion to compel Google's production of source code should be denied because Google has already provided the relevant code.	17
IV.	CONCLUSION.....	20

TABLE OF AUTHORITIES

Cases

<p><i>Belcher v. Bassett Furniture Indus., Inc.</i>, 588 F.2d 904 (4th Cir. 1978)</p> <p><i>Berry Plastics Corp. v. Intertape Polymer Corp.</i>, No. 3:10-cv-76-RLY-WGH, 2011 WL 4950013 (S.D. Ind. Oct. 17, 2011).....</p> <p><i>Blue Spike, LLC v. Vizio, Inc.</i>, No. 8:17-cv-01172-DOC-KESx, 2018 WL 8646476 (C.D. Cal. July 3, 2018).....</p> <p><i>Drone Techs., Inc. v. Parrot S.A.</i>, 838 F.3d 1283 (Fed. Cir. 2016)</p> <p><i>DUSA Pharms., Inc. v. New England Compounding Pharmacy, Inc.</i>, 232 F.R.D. 153 (D. Mass. 2005).....</p> <p><i>Ficep Corp. v. Haas Metal Eng'g, Inc.</i>, No. 14-243-CM, 2015 WL 566988 (D. Kan. Feb. 11, 2015)</p> <p><i>Haifley v. Naylor</i>, No. 4:CV94-3277, 1996 WL 539212 (D. Neb. July 9, 1996).....</p> <p><i>Integra LifeSciences Corp. v. HyperBranch Med. Tech., Inc.</i>, No. 15-819-LPS-CJB, 2016 WL 675553 (D. Del. Feb. 12, 2016)</p> <p><i>James v. Wash Depot Holdings, Inc.</i>, 240 F.R.D. 693 (S.D. Fla. 2006).....</p> <p><i>Kimberly-Clark Worldwide, Inc. v. First Quality Baby Prod., LLC</i>, No. 09-C-0916, 2010 WL 2990753 (E.D. Wis. July 27, 2010).....</p> <p><i>Milliken & Co. v. Evans</i>, No. 7:14-CV-4422-BHH, 2016 WL 11530305 (D.S.C. July 22, 2016)</p> <p><i>Negotiated Data Sols. LLC v. Dell, Inc.</i>, No. C09-80012MISC JF (HRL), 2009 WL 733876, (N.D. Cal. Mar. 17, 2009)</p> <p><i>RevoLaze LLC v. J.C. Penney Corp., Inc.</i>, No. 2:19-CV-00043-JRG, 2020 WL 1984322 (E.D. Tex. Apr. 27, 2020)</p> <p><i>Schwartz v. Mktg. Publ'g. Co.</i>, 153 F.R.D. 16 (D. Conn. 1994)</p> <p><i>Sithon Maritime Co. v. Mansion</i>, No. Civ. A. 96-2262-EEO, 1998 WL 182785 (D. Kan. Apr. 10, 1998)</p>	<p>11, 13, 14, 15</p> <p>13</p> <p>19</p> <p>19</p> <p>11</p> <p>13</p> <p>9</p> <p>13</p> <p>9</p> <p>13</p> <p>11</p> <p>13</p> <p>9, 10, 16</p> <p>9, 10</p>
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Uniloc USA, Inc. v. Apple, Inc.,
No. 18-cv-362-PJH (LB), 2018 U.S. Dist. LEXIS 72464 (N.D. Cal. Apr. 30, 2018) 19

Rules

Fed. R. Civ. P. 26.....	9, 10, 11, 13
Fed. R. Civ. P. 26(b)(2)(C)	11
Fed. R. Civ. P. 26(g)(1).....	8
Fed. R. Civ. P. 26(g)(2).....	8
Fed. R. Civ. P. 34.....	passim
Fed. R. Civ. P. 34(b)(1).....	8
Fed. R. Civ. P. 34(b)(2).....	10
Fed. R. Civ. P. 37.....	passim
Fed. R. Civ. P. 37(a)	8
Fed. R. Civ. P. 37(a)(3)(B)	7
Fed. R. Civ. P. 37(a)(3)(B)(iv).....	8
Fed. R. Civ. P. 37(b)(2)(A)	8

I. INTRODUCTION

Singular’s motion to compel an inspection of Google’s data centers, unlimited access to a Cloud TPU account, and production of “all” source code related to the accused TPU chips reflects a massive overreach aiming to restart the clock on fact discovery and gain intrusive, irrelevant discovery far beyond what is appropriate.

Singular never served requests to inspect Google’s data centers or access a Cloud TPU account during fact discovery. As a procedural matter, it therefore has no discovery request to which Google may be compelled to respond. Instead, Singular bases its motion on cursory emails sent after the written discovery deadline. Singular’s improper and untimely requests cannot sustain its motion under Federal Rule of Civil Procedure 37.

Even if Singular’s inspection demands were procedurally proper, they should also be denied because they are vague, overbroad, burdensome, and unlikely to lead to relevant information, especially at this stage of the case. Indeed, Singular admits that its request to inspect a Google data center is entirely irrelevant to its infringement theory and is solely for the purpose of creating demonstratives to show that TPUs are used in a data center. The inspection will provide no information about the technology at issue: specific matrix-multiplication calculations within the accused TPU chips. Nor will the TPU boards and chips even be visible by way of inspecting a data center. The visible server racks, only some of which contain TPU boards, are indistinguishable from each other. As such, an inspection would not reveal relevant information, and certainly does not justify the high burden and security risks of allowing access to one of the most sensitive locations at Google. In short, there is nothing to be gained beyond what Singular already has: sample TPU boards inside of their housings.

With respect to the Cloud TPU account that is the subject to Singular’s motion, Singular appears to have been able to set one up itself, yet vaguely alleges that it is not able to get the “necessary quota of resources” to run its tests. But Singular has never—not even in its motion—explained what tests it seeks to run, what “quota of resources” is “necessary,” or why it has been unable to purchase the computing resources it purports to need. Setting aside that there is no discovery request it seeks to enforce, its request is too vague to provide any basis for relief.

As for source code, Google has already produced the code that Singular references in its motion to compel, including the source code demonstrating that Google began using the bfloat16 format in early 2013 (before Dr. Bates gave a related talk at Google half-a-year later) as well as the particular System Verilog file that Singular identifies with particularity in its motion. But Singular’s additional demand for “all” of the code for the accused chips should be rejected as irrelevant and unduly burdensome. As Singular’s own source code production in the case highlights, producing highly sensitive source code is warranted only where it is directly relevant. Having failed to make any such showing here, Singular’s motion for “all” code should be denied.

In sum, Singular’s motion to compel—filed on the last day of discovery and based on informal and overly broad requests—should be denied in its entirety.

II. BACKGROUND

A. TPUs, Cloud TPUs, and Google’s data centers

The patents-in-suit are directed to a “processor or other device” that “includes processing elements designed to perform arithmetic operations.” ECF No. 105-6 (Kamber Decl. ISO Google’s Opp. to Mot. to Compel Production of Samples, Ex. 6 (’156 patent) at Abstract).¹

¹ The patents-in-suit are U.S. Patent Nos. 8,407,273; 9,218,156; and 10,416,961. *See* ECF No. 37 (First Amended Complaint), ¶ 27. Because the patents share a common specification and do not contain materially different claim language, this brief cites the ’156 patent when necessary.

Singular accuses two versions of Google’s TPUs, developed in part to accelerate machine learning, of infringing the patents-in-suits. ECF No. 106 (Bannon Decl. ISO Google’s Opp. to Mot. to Compel Production of Samples), ¶ 2.

As Google’s declarant explains, TPU chips in use in a data center are not visible for two reasons: (1) the chips exist under heat sinks on TPU boards, and (2) those TPU boards are contained in housings on Google’s server racks. *See Declaration of Deeva Shah in support of Opp. to Mot. to Compel (“Shah Decl.”), Ex. 9 at ¶ 4 (Declaration of Google Witness in support of Opp. to Mot. to Compel).* These racks exist in select, highly confidential, and secure Google data centers around the United States. *Id.* But TPU chips and boards are only part of the hardware and infrastructure in Google’s data centers, as these data centers support all of Google’s products and data needs. *Id.* at ¶ 5. The server racks are not labeled, and an observer would not be able to determine whether the racks contain TPUs or other hardware. *Id.* at ¶ 4.

Because service continuity and data security are of paramount importance to Google and its customers, Google places tremendous value on the security, privacy, and reliability of its data centers. *Id.* at ¶ 6. Google’s security measures include multiple, layered safeguards spanning from alarms to biometric access points to laser-based intrusion detection. *Id.* at ¶ 7. Google employs a “zero trust model” to limit electronic access to data-center systems. *Id.* Google does not allow any unauthorized photographs or video recordings of the data centers, as that could potentially reveal Google’s intellectual property as well as important security related information. *Id.* at ¶¶ 9, 11.

But Google’s concerns are not limited to *unauthorized* access or intrusion; the data centers need protection from unintentional disclosures of sensitive, proprietary information by even well-meaning visitors. *Id.* at ¶ 9. For that reason, even most Google employees do not

have access—less than one percent of Google employees will ever set foot in a data center, nearly all of whom are involved in data-center planning, operations, or security. *Id.*

Coordinating data center visits also poses a high risk of business interruption, because data centers operate with a limited number of employees with security clearance. *Id.* at ¶ 10. Only essential employees are allowed onto the data-center floor [REDACTED]

[REDACTED] *Id.* at ¶ 10.

Thus, Google’s employees and customers access TPUs for computation in the same way: through remote accounts. These accounts are called Cloud TPU accounts, are available to anyone, and allow customers to procure as much TPU computing power as they want.

B. Singular’s request for a Cloud TPU account and to inspect a data center

In October 2020, Singular requested sample TPU boards for two stated purposes: (1) to have a demonstrative exhibit for the jury and (2) to perform testing. *See* ECF No. 104 at 3-4. Google explained to Singular that sample TPU boards would not be able to run tests due to their many unique requirements (e.g., water-based cooling, the need for specific servers, etc.). *Id.* at 1-2. Google therefore offered a compromise: in lieu of providing physical samples, it would provide Singular a Cloud TPU account to conduct tests. *Id.* at 1. Rather than accept this proposal, Singular moved to compel the production of sample boards.

In January 2021, the Court compelled Google to produce sample TPU boards. *See* ECF No. 127. During the hearing, the Court acknowledged Google’s concern that Singular would not be able to use the sample boards for Singular’s stated purpose: testing. *See* Jan. 19, 2021 Mot. to Compel Hr’g Tr. (ECF No. 131) at 8:17-24. The Court asked whether Singular would be fine with just “a copy of the two boards at issue with nothing more, **including no longer the offer of access** to a program where you can run simulations.” *Id.* at 21:5-10 (emphasis added). Although Google’s compromise offer was conditioned on avoiding production of physical TPU boards,

Singular responded that it also accepted Google's Cloud TPU access offer. *Id.* at 21:13-17. But the Court recognized that this was underhanded, reiterating, "are you just seeking that they provide you with copies of the boards with the chips or are you also saying and I want you to **compel them to continue to offer us this access[?]**" *Id.* at 21:18-23 (emphasis added). In response, Singular conceded that it sought to compel only the sample boards, not Cloud TPU access. *Id.* at 21:24-25. And Google further clarified that although the parties agreed "that this motion [was] only about the board," Google "believe[d] Singular ha[d] rejected" the offer for Cloud TPU access by pursuing production of the samples. *Id.* at 22:8-14. Google complied with the Court's order and produced sample boards, including the full server-rack housing for each.

One month later, Singular asked Google by email to "make arrangements for Singular's counsel and Singular's expert . . . to access Google's working TPUs via a Cloud TPU account." Shah Decl., Ex. 1 (Gannon Feb. 19, 2021 Email). The email did not specify a reasonable scope or specific time, place, or manner for access. In response, Google's counsel provided instructions on how Singular could sign up for a commercially available Cloud TPU account. *See* Shah Decl., Ex. 2. That appeared to be the end of the issue; Singular did not respond.

In the same email to Google, Singular also asked Google to arrange for "counsel and [Singular's expert] to inspect a Google data center . . . in or near Massachusetts." Shah Decl., Ex. 1. This request similarly failed to include any specific proposal regarding the scope, manner, or time of inspection. Google responded that Singular would "not be able to see functioning TPU boards, let alone assess their functionality by visiting a data center." *See* Shah Decl., Ex. 2. Google noted that "the TPU boards exist inside of their housings," which Google had already produced. *Id.* Google also raised concerns about the relevance and proportionality of Singular's request to inspect data centers. Specifically, Google noted that there was "no aspect of the

infringement allegations that could be proven by viewing server racks operating in a data center,” and thus “an inspection of a Google data center would serve no purpose.” *Id.* Singular never responded.

During the entirety of fact discovery, Singular never served a formal request to inspect Google’s data centers; therefore, Google had no opportunity to formally object. And at no point did Singular suggest that it intended for its email to serve as a formal request under Rule 34.

Seven weeks after the deadline to serve written discovery and one week before the close of fact discovery, Singular told Google that the Cloud TPU account it tried to access “would not approve the quota of resources that are required to run [Singular’s] various tests.” Shah Decl., Ex. 3 (Gannon 7/16 Email). Singular did not explain when it had tried to access the account, what would constitute a “necessary quota of resources,” or why Singular could not access that quota given the lack of any specific limit. *Id.* Singular demanded that Google provide access to an unspecified quota within one business day. *Id.* Singular also appended a one-sentence request to “inspect and photograph a Google data center . . . sometime early next week.” *Id.* Singular’s email did not refer to Rule 34 or provide Google with time to object.

Google responded the next business day, attaching its March 1 letter and explaining its concerns. Shah Decl., Ex. 3 (Shah 7/19 Email). Google also noted that Singular had rejected Google’s compromise offer of a Cloud TPU account and that Google had not heard from Singular since. *See id.* Google also responded that any request to inspect data centers was “late, improper, highly burdensome, and irrelevant,” citing, among other things, the deadline to serve written discovery and Singular’s prior concessions regarding relevance. *Id.*

On the afternoon of July 23, 2021, the last day of fact discovery, Singular informed Google it would file a motion to compel. Shah Decl., Ex. 4. Singular did not reference any requests for access or inspection under Rule 34 or any specific meet-and-confers on these topics.

C. Google’s provision of source code to Singular

Google made its source code available for Singular to review on November 6, 2020. Shah Decl., Ex. 5 (Nov. 6, 2020 Corr. from Parker). Singular reviewed the source code in Boston on December 14, December 21, and December 22, 2020. Singular also reviewed the source code in San Francisco on July 8, 2021. Shah Decl. ¶ 13. Following that review, counsel for Singular requested additional source code related to the “MXU, VPU, and Core Sequencer,” which Singular maintained was “referenced in Singular’s infringement contentions as components of the Accused TPU Boards.” Shah Decl., Ex. 6 (July 9, 2021 Corr. from Seeve). Although it questioned the relevance, Google made the requested source code available. *Id.* Singular reviewed Google’s source code again on July 20 and July 21, 2021. Shah Decl. ¶ 13. Following that review, Singular requested additional code including, for the first time, “all other source code corresponding to the TensorCore in the TPU v2 and TPU v3.” Shah Decl., Ex. 7 (July 22, 2021 Corr. from Seeve). Singular’s motion to compel followed.

III. ARGUMENT

A. Singular’s request to inspect Google’s data centers is procedurally improper, overly burdensome, and unlikely to lead to relevant information.

1. *Singular’s demands to inspect a data center are procedurally improper and untimely.*

Singular’s motion to compel inspection of a Google data center should be denied because it is improper under Rule 34 and untimely.² Rule 37(a)(3)(B) allows a “party seeking discovery”

² Although Singular does not identify a procedural basis for its motion, Google assumes Singular

to “move for an order compelling . . . production, or inspection.” *Id.* Regarding inspection, such a motion “may be made if . . .” a party “fails to respond that inspection will be permitted—or fails to permit inspection—as requested under Rule 34.” Fed. R. Civ. P. 37(a)(3)(B)(iv) (emphasis added). A request under Rule 34 requires, among other things, that a party “(A) must describe with reasonable particularity each item or category of items to be inspected; [and] (B) must specify a reasonable, time, place, and manner for the inspection and for performing the related acts.” Fed. R. Civ. P. 34(b)(1). Rule 34 requests must also comply with Rule 26³ and abide by the Court’s discovery deadlines. *Id.* After a party serves a valid Rule 34 request, the recipient has 30 days to object in writing. *See* Fed. R. Civ. P. 37(b)(2)(A). Here, Singular’s informal email requests cannot support a Rule 37 motion to compel because they are (1) improper in form and (2) untimely.

First, Singular never served any request compliant with Rule 34’s requirements to inspect a data center. Instead, Singular attempts to rely on an email from February 19, 2021, but that email contains only the following informal and incomplete comment:

In addition, we would like to make arrangements for counsel and Dr. Reda to inspect a Google data center with the accused TPUv2 and TPUv3 Devices installed and working. We would prefer to inspect a data center in or near Massachusetts.

Shah Decl., Ex. 1 (Gannon 2/19 Email). Singular also cites to its email on July 16, 2021, discussing data-center inspection in **one sentence**: “Singular would also like to inspect and photograph a Google data center with the accused TPUv2 and TPUv3 Devices installed and working sometime early next week.” Shah Decl., Ex. 3. These emails lacked any reasonable

moves to compel under Rule 37(a) regarding inspections it purportedly requested under Rule 34.

³ The lack of a signature (and its accompanying requirements) means “parties have no duty to act” on the request. Fed. R. Civ. P. 26(g)(1) and 26(g)(2).

particularity as to the scope or a “reasonable time, place, and manner” for inspection. Fed. R. Civ. P. 34. Put simply, the emails do not constitute valid Rule 34 requests.

Moreover, Singular’s informal requests for access cannot form the basis for a motion to compel. Courts have repeatedly denied motions to compel where the movant fails to make a formal discovery request, instead relying on informal emails or letters. *See, e.g., Schwartz v. Mktg. Publ’g. Co.*, 153 F.R.D. 16, 21 (D. Conn. 1994) (denying motion to compel inspection based on informal, incomplete requests via correspondence); *James v. Wash Depot Holdings, Inc.*, 240 F.R.D. 693, 694 (S.D. Fla. 2006) (“Rule 37 does not authorize a court to compel documents or a release to obtain them based on an informal discovery request.”); *Haifley v. Naylor*, No. 4:CV94-3277, 1996 WL 539212, at *1–2 (D. Neb. July 9, 1996). As the court in *Sithon Maritime Co. v. Mansion* explained, motions to compel based on informal requests are impermissible because, unlike informal letters, only “[f]ormal requests clearly implicate the duties of opposing parties to respond, pursuant to Fed. R. Civ. P. 34.” No. Civ. A. 96-2262-EEO, 1998 WL 182785, at *2 (D. Kan. Apr. 10, 1998). “To treat correspondence between counsel as formal requests for production under Rule 34,” as Singular does here, **“would create confusion and chaos in discovery.”** *Id.* (emphasis added). As the court in *Schwartz* explained, “the entire enforcement mechanism of Rule 37 contemplates the parties having **formally resorted** to the underlying discovery rule . . . rather than a casual, informal request.” *Schwartz*, 153 F.R.D. at 21 n.12 (emphasis added). Put simply, “Rule 37 does not by its terms apply” to informal requests. *Id.*

Here, Singular never served any formal, valid Rule 34 requests to inspect a Google data center. The emails that Singular cites as its requests do not meet the requirements of Rules 26 or 34 and consist of two sentences at most, all in informal correspondence. Given that Singular

served numerous discovery requests in an appropriate, formal, certified manner—with explicit reference to Rules 26 and 34—Singular’s decision not to do so here should be treated as a deliberate choice. *See* Shah Decl. at ¶ 12. The failure to issue a formal request is not just a minor procedural concern; here, it has led to the exact substantive concerns the courts in *Sithon* and *Schwartz* highlighted in rejecting the enforcement of such requests. Singular’s informal emails did not implicate Google’s duty to object under Rule 34(b)(2); thus, Google must attempt to provide its objections regarding relevance, burden, confidentiality, and proportionality in its opposition to a motion to compel. And due to the lack of reasonable particularity or a “reasonable time, place, and manner for inspection,” the Court and Google are left to guess as to the scope of each request. Given the high sensitivity and security concerns surrounding Google’s data centers, the lack of any reasonable scope is particularly concerning. It has also denied the parties—and the Court—the ability to rely on good faith meet-and-confer efforts to resolve or crystallize the issues. Because Rule 37 does not authorize courts to compel inspection based on informal requests for these exact reasons, the Court should deny Singular’s motion.

Second, even if Singular’s informal emails could be considered requests, those requests were untimely. The deadline to serve written discovery, including requests to inspect, was May 24, 2021. ECF No. 70. But Singular’s informal requests for inspection and access came seven weeks later, just one week before the close of fact discovery. Shah Decl., Ex. 3. And Singular cannot rely on its February 19, 2021 email to Google to argue otherwise. Google replied to Singular on March 1, 2021 and explained why the requests were improper. Shah Decl., Ex. 2. Singular did not respond until July 16, 2021, forfeiting its opportunity to serve formal, valid, and timely requests within the Court-ordered deadline. This motion to compel based on improper, untimely requests on the last day of discovery should be denied.

2. ***Singular's data center inspection request is duplicative, burdensome, and unlikely to lead to relevant information.***

Singular's demand to inspect a data center is also highly intrusive and unlikely to lead to relevant information. As courts interpreting Rule 34 have acknowledged, "entry upon a party's premises may entail greater burdens and risks than mere production of documents," and "a greater inquiry into the necessity for inspection would seem warranted." *Belcher v. Bassett Furniture Indus., Inc.*, 588 F.2d 904, 908 (4th Cir. 1978). Thus, in considering an inspection request, courts must assess "the degree to which the proposed inspection will aid in the search for truth . . . balanced against the burdens and dangers created by the inspection." *Id.*; *see DUSA Pharms., Inc. v. New England Compounding Pharmacy, Inc.*, 232 F.R.D. 153, 154 (D. Mass. 2005) (adopting the heightened *Belcher* standard). Relying on *Belcher*, which Singular does not address, courts have concluded—in patent cases—that inspection is a "highly intrusive form of discovery" and should not be permitted where the information "1) is unreasonably cumulative or duplicative or can be obtained from a less burdensome source, 2) the party seeking discovery has had ample opportunity by discovery in the action to obtain the information sought or 3) the burden or expense of proposed discovery outweighs its likely benefit." *DUSA*, 232 F.R.D. at 154 (citing *Belcher*, 588 F.2d at 908; Fed. R. Civ. P. 26(b)(2)(C)) (quotation marks omitted); *Milliken & Co. v. Evans*, No. 7:14-CV-4422-BHH, 2016 WL 11530305, at *7 (D.S.C. July 22, 2016) (denying inspection of production facilities in a patent case given less burdensome alternatives). All three *Belcher* factors counsel against permitting Singular a data center inspection here.

First, Singular's request to inspect Google's data centers is irrelevant to the substance and merits of the claims at issue. "Neither rule 34 nor rule 26, the general discovery rule, permits blanket discovery upon **bare skeletal request** when confronted with an objection, as the plaintiffs seem to assume. Some degree of need must be shown." *Belcher*, 588 F.2d at 908

(emphasis added). As explained above, Singular’s informal demands for inspection—two sentences at most—are “bare skeletal requests” with no explanation of Singular’s actual need. As Google has explained, inspection of Google’s data centers would not allow Singular to see how TPUs function or even interact with other non-accused elements of Google’s infrastructure. *See Shah Decl., Ex. 9 at ¶ 4.*

Singular’s motion elides the difference between Google’s data centers and the TPUs; Singular has accused a sub-part of the TPU chip that performs certain matrix-multiplication arithmetic of infringement, *not* Google’s data centers. Although Singular correctly notes that “[d]iscovery related to a defendant’s products is relevant when it bears upon whether those products infringe the asserted patents,” the data centers are not the product at issue. Google does not dispute that “the TPUv2 and v3 boards are central, and therefore relevant, to Singular’s claims of infringement.” Mot. at 7. But Singular fails to explain how the relevance of particular sub-parts of the accused chips on those products would warrant inspecting an entire Google data center. The only explanation Singular offers is that the jury should see “where and how the accused products are actually used in performing the alleged infringing activities.” Mot. at 9. But there is no connection between Singular’s inspection and the jury’s understanding of the inner workings of TPU chips. Indeed, the use of TPUs in data centers is not visible because they exist under heat sinks on TPU boards, which are within housings on server racks. *See Shah Decl., Ex. 9 at ¶ 4.* To the extent Singular wants to show the jury a picture of TPUs, Google has already produced pictures suitable for jury demonstratives.

Much of the caselaw Singular cites in support of its inspection request is inapposite because those inspection requests are specific to the accused products or processes, not their host facilities. For example, in *Negotiated Data Sols. LLC v. Dell, Inc.*, No. C09-80012MISC JF

(HRL), 2009 WL 733876, (N.D. Cal. Mar. 17, 2009), the court—under the minimal relevance standard of Rule 26—compelled production of the **code** implementing chip operations. *Id.* at *3. *Negotiated Data* did not involve inspection requests of premises under the heightened *Belcher* standard; here, notably, Google already produced the code underlying the accused functionality in Google’s chips. Singular also cites *Integra LifeSciences Corp. v. HyperBranch Med. Tech., Inc.*, No. 15-819-LPS-CJB, 2016 WL 675553 (D. Del. Feb. 12, 2016), to argue that an inspection is “indisputably relevant to the claims and defenses in this matter.” *Id.* at *1; Mot. at 7. But *Integra* did not discuss the relevance of inspecting premises. The full quote reads: “**The samples** are indisputably relevant to the claims and defenses in the matter.” *Id.* (emphasis added). But Google produced sample TPU boards over six months ago, and Singular’s counsel represented that Singular did not necessarily need access to Google’s data-center environment. Jan. 19, 2021 Mot. to Compel Hr’g Tr. (ECF No. 131) at 13:1-3 (Singular’s counsel stating that Singular does not necessarily “need to have the cooling system or the software or **all of the environment** that you need to actually operate the chip in the manner intended”) (emphasis added). Singular’s citations to other cases are similarly inapplicable, including numerous citations to cases involving method patents requiring the inspection of manufacturing processes.⁴ Singular has failed to articulate any reason why inspecting Google’s data centers—not the TPU chips, boards, or underlying code—would provide relevant information.

⁴ See Mot. at 7 (citing *RevoLaze LLC v. J.C. Penney Corp., Inc.*, No. 2:19-CV-00043-JRG, 2020 WL 1984322, at *3 (E.D. Tex. Apr. 27, 2020), for the need to produce **samples** of the **accused products** for testing and inspection, which Google has already done); see also Mot. at 7-8 (citing *Kimberly-Clark Worldwide, Inc. v. First Quality Baby Prod., LLC*, No. 09-C-0916, 2010 WL 2990753, at *3 (E.D. Wis. July 27, 2010), and *Berry Plastics Corp. v. Intertape Polymer Corp.*, No. 3:10-cv-76-RLY-WGH, 2011 WL 4950013, at *2 (S.D. Ind. Oct. 17, 2011), where visual inspections of manufacturing processes were necessary to determine infringement of method or process patents, which is not at issue here); Mot. at 9 (citing *Ficep Corp. v. Haas Metal Eng’g, Inc.*, No. 14-243-CM, 2015 WL 566988 (D. Kan. Feb. 11, 2015) (allowing process inspection)).

Second, even if Singular’s request to inspect a data center led to any relevant evidence, that evidence would simply be cumulative. Unlike most cases where parties attempt to compel an inspection, Singular is at the end of fact discovery. Singular has already received samples of the TPU boards (with the exact housing and components visible in a data-center server rack), Google’s microarchitecture specifications, and access to the chip-design code. Moreover, Singular has completed its depositions of Google witnesses in this case. At this stage, Singular’s inability to provide any clear explanation for the relevance of a data-center inspection is telling. Inspection of Google’s data centers is so far afield from Singular’s infringement allegations that it would not reveal anything new.

Third, any inspection of Google’s data centers would be highly intrusive, disrupt business, and raise significant concerns regarding Google’s proprietary technology. *See Shah Decl.*, Ex. 9 at ¶¶ 9-12. Singular’s requested inspection is not of the accused products or an accused process. Singular requests inspection of the buildings that house the accused products despite the inability to view those very products “in action.” Those data-center buildings also house other highly sensitive, proprietary hardware and infrastructure systems, none of which are in dispute here. *Id.* at ¶ 5. Less than one percent of Google employees will ever gain access to Google’s data centers because of the potential security risks. *Id.* at ¶ 9. And even when limited employees receive access, that access is on a controlled basis and the security protocols are extensive. *Id.* at ¶ 7.

Singular seeks physical access to one of the most sensitive aspects of Google’s campus without any reasonable justification and in complete contradiction of the standard set forth in *Belcher*. Singular has not provided any explanation of what its inspection would entail, who would attend, the length of time, or what protections would be in place. *Cf. Belcher*, 588 F.2d at

911 (noting that “precision and care” are necessary in formulating inspection orders). Singular cannot point to a single instance of a court compelling Google to provide a data-center inspection, let alone based on an informal inspection request without specific scope or reasonable parameters. The lack of reasonable particularity is especially concerning with the immensely heavy burden of coordinating [REDACTED]
 [REDACTED]

Given the heightened standard for courts to compel the inspection of premises, Singular’s motion to compel should be denied. Singular can provide no reason that inspection of the data centers—and *not* the accused TPU chips or boards, which Singular already possesses—would lead to admissible evidence that Singular has not otherwise received by now.

B. Singular’s motion to compel access to a Cloud TPU account is also procedurally improper and untimely, particularly given Singular’s previous rejection of Google’s offer to provide access to such an account.

Singular’s motion to compel access to a Cloud TPU account should also be denied because it is (1) improper under Rule 34, (2) untimely, and (3) vague and overly broad.

First, Singular never served any request compliant with Rule 34’s requirements to access a Cloud TPU account. Singular states it “conveyed” a “request for more compute” in July 2021, and “Google declined.” Mot. at 4-5. But Singular’s demand consisted of two sentences in an email stating:

When we tried to access the Cloud TPU account, it would not approve the quota of resources that are required to run our various tests. Please provide us with access to the Cloud TPU account with the necessary quota of resources no later than Monday, July 19, 2021, so that we can run our tests.

Shah Decl., Ex. 3. The email lacked any reasonable particularity as to what “quota” of “compute” would be necessary, the resources Singular lacks through its current access, or why Singular could not procure the “quota” it sought on the commercially available account with no

limits. The request also did not contain a “reasonable time, place, and manner” for access, instead demanding compliance in **one business day**. Fed. R. Civ. P. 34. And as discussed above, Singular’s informal emails do not constitute valid Rule 34 inspection requests either; therefore, they cannot form the basis for a motion to compel under Rule 37. *Schwartz*, 153 F.R.D. at 21 n.12 (holding that “Rule 37 does not by its terms apply” to informal requests).

Second, even if Singular’s informal emails could be considered requests, those requests were untimely. The deadline to serve written discovery, which includes requests to inspect or gain access, was May 24, 2021. Singular’s email came seven weeks later. As with the inspection request, Singular cannot rely on its February 19, 2021 email to Google to argue otherwise. Google replied to Singular on March 1, 2021, and Singular did not respond until over four months later and after the deadline to serve written discovery. Singular forfeited its opportunity to serve valid and timely requests within the Court-ordered deadline. Singular’s motion incorrectly suggests it made “several attempts to conduct testing,” where “[i]n each instance,” “Google refused the request for more compute.” Mot. at 4-5. In fact, Singular first raised the testing-capacity issue with Google’s counsel on July 16, 2021, months after Google provided access instructions and four days before the end of fact discovery. Singular does not—and cannot—justify this delay, providing yet another reason to deny this motion to compel.

Third, Singular’s requests for Cloud TPU access are vague and overbroad. Although Singular contends that a publicly accessible account does not provide the “compute that Singular felt would be necessary in order to complete the testing,” Singular does not articulate what amount of compute is necessary, what manner of access would be adequate, or why it could not itself procure the resources commercially. Mot. at 4. Without that information, Google cannot adequately respond to Singular’s vague, unsubstantiated, and unclear demand.

Finally, Singular’s suggestion that it accepted Google’s compromise offer of a Cloud TPU account does not withstand scrutiny. The Court recognized the offer as just that: an offer to provide access to a Cloud TPU account in lieu of samples. But in moving to compel the production of samples, Singular rejected that offer. Regardless, as Google has explained, Google’s Cloud TPU accounts are publicly accessible, and Singular can procure whatever Cloud TPU compute capacity it desires to run its tests. In sum, the Court should deny Singular’s motion to compel Cloud TPU access on both procedural and substantive grounds.

C. Singular’s motion to compel Google’s production of source code should be denied because Google has already provided the relevant code.

Singular’s motion to compel seeks three categories of source code: (1) the source code “about which Jeff Dean testified at his deposition [REDACTED] [REDACTED] (2) the code that defines the value of the variable [REDACTED]” and (3) “all other source code corresponding to the TensorCore in the TPU v2 and TPU v3 products.” Mot. at 9. Each issue is addressed below.

First, Singular requests the code “about which Jeff Dean testified at his deposition.” Mot. at 9. Google has already produced this source code. As Google explained to Singular in a letter it sent shortly after Singular filed its motion, Google produced “all code that could be located related to the inception and use of bfloat16 at Google in 2013.” Shah Decl., Ex. 8 (July 23, 2021 Corr. from Kamber). That source code production includes the source code that Jeff Dean testified [REDACTED]

[REDACTED].” Mot. at 9. There is nothing more for Google to produce in response to this portion of Singular’s motion.

Second, Singular requests the code that “defines the value of the variable [REDACTED] Mot. at 9. Google has already produced that code. As Google

explained to Singular, although Google does not agree that the [REDACTED] variable is relevant or required to be produced, Google made this source code available to avoid an unnecessary dispute. Shah Decl., Ex. 8. Singular’s motion as to the [REDACTED] source code is thus moot.

Third, Singular requests that Google be compelled to produce “all other source code corresponding to the TensorCore in the TPU v2 and TPU v3 products, to the extent that this source has not yet been made available to Singular.” Mot. at 9. Singular fails to provide any basis for its contention that Google has withheld relevant source code. Instead, Singular cites Google’s 30(b)(6) witnesses’ general statements about source code. Singular argues, for example, that Dr. Jouppi testified that “he would be unable to answer Singular’s questions without reference to relevant source code.” *Id.* at 10. But Singular offers no basis for its conclusion that this statement relates to source code that Google has “yet to make available.” *Id.* at 9. And nothing in Dr. Jouppi’s testimony suggests that, for the relevant functionality, the Verilog code he was referring to is different than the Verilog code that Google has already made available. *See* Ex. E to McGonagle Decl. (“Q: Would you be able upon examining this document to tell me whether it’s accurate or not? . . . The Witness: I’d have to look at the code. The Verilog.”). As Singular is aware, Google made the System Verilog code available to Singular in November of last year. Furthermore, Singular had every opportunity to explore at Dr. Jouppi’s deposition (as well as during other engineer depositions) which parts of the System Verilog might be relevant to the infringed functionalities, but it did not do so.

Singular also cites Jeff Dean’s statements, who “testified about code that he wrote that allegedly relates to the use of low-precision floating point formats in 2013.” Mot. at 10. This testimony is not about code for either version of the accused TPU chips, which were developed

years later. In any event, as discussed above, Google already produced the source code about which Dr. Dean testified.

To the extent Singular seeks “all other source code related to TensorCore . . . TPU v2 and TPU v3,” such a request is overbroad, particularly at this stage in the litigation. In November, Google produced source code more than sufficient for Singular to assess its infringement allegations, fulfilling its obligations under the Local Rules. Indeed, Singular reviewed Google’s source code several times without comment more than seven months prior, only to demand “all other source code” on the final day of fact discovery. But neither party is or was required to produce “all source code” with **any** connection to the accused functionality. In fact, Singular also did not produce the entirety of its own source code for the S1 chip that it asserts practices the Patents-in-Suit—only the parts of the S1 chip with the relevant functionality.

Parties are not required to make available their “most sensitive and valuable property” without any regard to relevance. *Drone Techs., Inc. v. Parrot S.A.*, 838 F.3d 1283, 1300 (Fed. Cir. 2016) (determining the district court abused its discretion by “fail[ing] to explain why ‘all’ source code or even *any* source code was needed or relevant”) (emphasis in original); *see also Blue Spike, LLC v. Vizio, Inc.*, No. 8:17-cv-01172-DOC-KESx, 2018 WL 8646476, at *5 (C.D. Cal. July 3, 2018) (deeming “overbroad” requests for “all source code . . . referring or related to the structure, operation, function or performance of the Accused Product and/or its components”); *Uniloc USA, Inc. v. Apple, Inc.*, No. 18-cv-362-PJH (LB), 2018 U.S. Dist. LEXIS 72464 at *9-10 (N.D. Cal. Apr. 30, 2018) (“[Plaintiff] may not . . . demand that Apple produce all of its iOS and watchOS source code so that [Plaintiff] can paw through Apple’s source code without limitation”) (cleaned up). Google provided the source code it was obligated to produce and has cooperated not once but twice in supplementing that production to provide particular

files at Singular's request. Beyond that, Singular's motion to compel Google to provide "all" source code should be denied.

IV. CONCLUSION

For the foregoing reasons, Google respectfully requests that the Court deny Singular's motion to compel.

Respectfully submitted,

Dated: August 6, 2021

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CERTIFICATE OF SERVICE

I certify that this document is being filed through the Court's electronic filing system, which serves counsel for other parties who are registered participants as identified on the Notice of Electronic Filing (NEF). Any counsel for other parties who are not registered participants are being served by first class mail on the date of electronic filing.

/s/ Nathan R. Speed
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